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(54) ELECTRIC TORCHES

(71) I, ROGER JOSEPH BRADSHAW of White Hall, Queens Road, Darwen, Lancashire, a British subject, do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:

This invention relates to an electric torch. In particular it relates to types of electric torches which may be decorative and/or childrens' toys and also to types of torches useful for the illumination and inspection of relatively inaccessible locations, for example within a motor car or household or other machinery.

In all the types of torches to which the present invention relates, the light source, which will normally be an electric light bulb of conventional nature is located at the extremity of an elongate member which is integral with or connected to a body portion housing the batteries or a connection to an external source of electrical energy. By deforming or bending the elongate member the light source can be moved with respect to the body portion and the desired decorative or amusing effect or the desired illumination of the relatively inaccessible location achieved.

According to the present invention, I provide an electric torch comprising at least one elongate member which comprises a casing, said casing being not itself electrically conducting over its whole length and electrical conductors which pass through the elongate member to connect a light source at one end of the elongate member to a body portion at the other, electrical power being supplied from or through said body portion, said torch being characterised in that said elongate member or members can be manually deformed or bent and will maintain the deformed or bent state in the absence of further externally applied force.

The casing forming part of the elongate member may be fabricated from a rubber, silicone rubber or a thermoplastic material which may be foamed e.g. it may be foam rubber latex or polyurethane foam. In an alternative embodiment the casing may comprise an outer skin e.g. of silicone rubber provided with a foam filling. The electrical conductors which pass through the casing may suitably be formed from metal wires e.g. copper wires of relatively thick gauge. In the preferred form of my invention the mechanical property of the elongated member whereby it maintains its deformed or bent state in the absence of further externally applied force is derived from the electrical conductors, the casing merely providing an insulating and/or decorative cladding therefor. It is however quite within the scope of the present invention for the above mentioned mechanical property to be derived from the casing or from non-conducting stiffening members within the casing, in which event the electrical conductors need not possess any such properties.

The elongate member or members may be formed integrally with the body portion for example by means of a moulding technique e.g. rotation or slush moulding and, in this case, the electrical conductors are preferably incorporated into the casing at this stage. It is also within the scope of my invention for the elongated member or members to be formed as a separate unit which may then be mechanically and electrically connected to the body portion e.g. by a screw, snap or bayonet fit. A number of different elongate members may in this way be attached to the body portion. This may find application in toys e.g. in fitting limbs to a doll, masts to a boat or branches to a tree and in the inspection of relatively inaccessible parts of machinery where elongate members of differing length may be provided with a body portion, the

different members being interchangeably connectable to one or more points on the body portion.

It is most preferable that the electric torches of my invention should be powered by batteries which may be rechargeable batteries, but it is also envisaged that they should be powered by an external power source such as the usual mains supply. This may be utilised at the supply voltage or it may be converted by means of a transformer, which may be within the body portion, to a lower voltage.

One or more lenses may be used to focus the light and, if used these can be moulded into the elongate member. Colour filters may also be provided — particularly in the case of decorative and toy applications or in applications where a warning or signalling light is incorporated in the torch.

The body portion is preferably provided with suitable means for attaching it to an external support. This may take the form of a simple loop or hook but a particularly useful method of attachment is by means of a suction pad. When the preferred construction which utilises a thermoplastic outer casing is used, this suction pad can be integrally moulded.

In order that my invention may be more fully understood it will be further described with reference to the accompanying drawings wherein

Figure 1 is a general view of a decorative "gonk" in accordance with the invention.

Figure 2 is a cross-sectional view of the article shown in figure 1 and Figure 3 is a cross-sectional view of an inspection torch in accordance with the invention.

The "gonk" shown in figures 1 and 2 comprises a battery casing 1, a bulb socket 2 and connecting wires 3 and 4 of relatively thick (e.g. 1/16" diameter) copper wire around which articles is moulded rubber latex foam and the whole covered with an outer skin of silicone rubber so that there is formed a body portion 5 and an elongate member 6. The battery casing and bulb socket may be formed from a relatively rigid thermoplastic such as polyethylene, polypropylene or polystyrene or from metal, in which latter case they are of course suitably insulated. The copper wires 3 and 4 may be provided with an insulating coating for example of thermoplastic prior to the formation around and between them of the latex foam. If rechargeable batteries are used, and this is preferred, the backing portion 7 may be formed integrally with the body portion 5. In this case suitable terminals for recharging the battery are provided in the body or backing portion. If the batteries are not re-chargeable, then access to the

battery casing is provided e.g. by forming the backing portion 7 as a separate unit which may be press fitted to body portion 5 or, while retaining the integral construction of body and backing portions, providing the latter with a flexible flap or flaps by means of which batteries could be fitted or removed. In the embodiment shown, the backing portion 7 is provided with sucker pads, one of which is shown at 8, by means of which the "gonk" may be attached to a smooth surface such as a wall.

A suitable on-off switch (not shown) is inserted in the circuit, by the operation of which a bulb 9 which is screwed into the bulb casing can be illuminated. As can be seen from figure 1, the elongate member 6 which forms the "nose" of the "gonk" may be bent round to a position such as that shown by the dotted lines. The eyes 10 and 11 of the "gonk" may also be provided with electric bulbs which can be illuminated simultaneously or sequentially with the bulb 9 in the nose by a suitable switching mechanism. These eyes may alternatively be at the end of further elongate members of similar construction to member 6 but preferably not so long.

The inspection torch shown in figure 3 comprises a relatively rigid thermoplastic body portion 21 provided with a battery casing 22 from which wires 23 and 24 run to the female part 25 of a bayonet connector. Into this fits the male part 26 of the bayonet connector which is joined by thick copper wires 27 and 28 to a bulb socket 29 into which a bulb 30 may be fitted and which is further provided with a lens 31 attachable by screw ring 32. Around the bulb socket, lens holder, copper wires and bayonet socket is moulded polyurethane foam so that the whole forms an elongate member 33. This may be bent to any suitable shape such as that shown by the dotted lines in figure 3.

The body portion 21 is provided with a hook 34 for attachment to a suitable support but of course it will be understood that any suitable attachment means including a suction pad such as that shown in figures 1 and 2 may be used. The body portion also incorporates an on/off switch (not shown).

It will be appreciated that elongate members of any desired length, diameter and bulb or lens arrangement may be fitted into the body portion of the torch shown in figure 3. It will also be appreciated that such varied elongate members may be provided with attachments such that they will fit directly into existing conventional torches e.g. by screwing into the bulb fitting or into existing conventional light fittings such as the normal

domestic 200-240 volt bayonet fittings. My invention also therefore comprises these elongate members unattached to any body.

As mentioned above the body of my torch may be fabricated from any suitable material and one such material is pottery or china which may of course be decorated with any appropriate design or pattern.

10 WHAT I CLAIM IS:—

1. An electric torch comprising at least one elongate member which comprises a casing, said casing being not itself electrically conducting over its whole length and electrical conductors which pass through the elongate member to connect a light source at one end of the elongate member to a body portion at the other end, electrical power being supplied from or through said body portion, said torch being characterised in that said elongate member or members can be manually deformed or bent and will maintain the deformed or bent state in the absence of further externally applied force.

2. A torch according to claim 1 wherein said casing of the elongate member comprises an outer skin provided with a foam filling.

3. A torch according to claim 2 wherein said outer skin is of silicone rubber and the foam filling is of rubber latex foam.

4. A torch according to any one of claims 1 to 3 wherein the mechanical property of the elongate member whereby it

maintains its deformed or bent state in the absence of further externally applied force is derived from the electrical conductors.

5. A torch according to claim 4 wherein said electrical conductors are formed from thick gauge copper wire.

6. A torch according to any one of the preceding claims wherein said elongate member or members are formed integrally with said body portion.

7. A torch according to any one of the preceding claims wherein said body portion is provided with a suction pad by means of which it may be attached to an external support.

8. A torch according to any one of the preceding claims wherein the source of electrical power is one or more batteries housed within said body portion.

9. A torch according to claim 8 wherein said battery or batteries are rechargeable.

10. An elongate member according to that comprised in the torch according to claim 1, said member being provided at one end with a light source and at the other end with an attachment such that it can readily be interchanged from one body portion to another or fitted to a conventional torch or light fitting.

11. A torch according to claim 1 as hereinbefore described with reference to and as illustrated in Figures 1 and 2 or Figure 3.

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